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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,360	06/24/2003	Fahri Ozel	DN2003081	1110

27280 7590 08/22/2005

THE GOODYEAR TIRE & RUBBER COMPANY
INTELLECTUAL PROPERTY DEPARTMENT 823
1144 EAST MARKET STREET
AKRON, OH 44316-0001

EXAMINER

MAKI, STEVEN D .

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/602,360

Applicant(s)

OZEL ET AL.

Examiner

Steven D. Maki

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 041105.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1733

1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2) **Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 602 (JP 3-7602) in view of at least one of Japan 349 (JP 10-298349) and Korea (KR 2003046542 published 6-18-03 as evidenced by the Derwent abstract) and further in view of Europe 281 (EP 893281).**

Japan 602 discloses a tire comprising a tread having a cap-base structure wherein the tire has high speed durability, wear resistance, low rolling resistance and superior late term cut and chip resistance. Japan 602 teaches that low heating rubber is used to improve durability. See page 3 of translation. The tire is a pneumatic tire having a size such as 1000 R20 14PR. The base comprises 100 parts natural rubber, 10-40 parts silica and 10-40 parts carbon black. The thickness of the base is preferably 50% or more than the nonskid base and the cap is preferably 50% or less of the nonskid base. The thickness of the base is therefore at least 50% of the total tread thickness. In embodiment II, the cap (composition G) comprises 100 parts natural rubber and 50 parts carbon black. In embodiment II, the base (composition C) comprises 100 parts natural rubber, 22.5 parts silica and 22.5 parts carbon black. The base has a thickness of 50% of the non-skid base. The ratio of cap volume to base volume is therefore 1.0. The cap is stiffer than the base since the cap has a 300%

Art Unit: 1733

modulus of 158 whereas the base has a 300% modulus of 110. Japan 602 does not recite using 8 to 35 parts silica in the cap.

As to claim 10, it would have been obvious to one of ordinary skill in the art to provide the tread of Japan '602's tire having improved durability (low heating), wear resistance, rolling resistance and late term cut and chip resistance such that the cap comprises silica and carbon black as claimed so that:

the cap comprises:

100 parts natural rubber,
about 25 to about 50 parts carbon black, and
about 8 to about 35 parts silica;

and

the base comprises:

100 parts natural rubber,
about 25 to about 50 parts carbon black, and
about 8 to about 35 parts silica

since:

(1) Japan 602, directed to improving durability (low heating), wear resistance and late term cut and chip resistance, teaches:

a cap comprising

100 parts natural rubber,
reinforcing filler such as 50 parts carbon black,

a base comprising

100 parts natural rubber,
10-40 parts of carbon black,
10-40 parts silica

and

(2) (a) Japan 349, directed to a cap / base tire tread having low heat build up and high abrasion resistance, teaches a **rubber composition X for the cap and undertread (base)** comprising 100 part natural rubber, 0-80 parts carbon black and

Art Unit: 1733

5-80 parts silica; Japan 349 thereby suggesting using silica and carbon black in both the cap and base of Japan 602's tread and/or (b) Korea, concerned with abrasion resistance of a cap / base tire tread, teaches improving gas mileage by using a **cap** comprising 100 parts natural rubber, 35-40 parts carbon black and 10-15 parts silica and a **sub-tread (base)** comprising 100 parts natural rubber, 25-38 parts carbon black and 5-20 parts silica; Korea thereby suggesting using silica and carbon black in both the cap and base of Japan 602's tread.

As to claimed tread base to tread cap volume ratio being 0.5 - 1.0, Japan 602 suggests this claimed volume ratio since Japan 602 teaches providing the base with a thickness of more than 50% of the non-skid base and providing the cap with a thickness of less than 50% of the non-skid base. See translation of Japan 602.

Furthermore, it would have been obvious to one of ordinary skill in the art to provide / optimize Japan 602's cap and base such that the **ground contacting tread cap** has a 300 percent modulus of 10-12 MPa and the base has a 300% modulus 8 to 11 MPa in view of:

(1) Japan 602's teaching to form the cap and base of the tread such that the tire has improved durability (low heating), wear resistance, *rolling resistance* and late term cut and *chip resistance* wherein the 300% modulus for the **ground contacting tread cap** is greater than the 300% modulus for the base in embodiment II,

(2) Europe 281's suggestion to form a **ground contacting tread** with 5-35 parts silica and 10-75 parts carbon black such that the 300% modulus is 10-16 MPa to reduce cracking, chipping and chunking and to increase wear resistance.

Art Unit: 1733

As to claims 11 and 12, the claimed amounts of silica and carbon black for the tread cap / tread base would have been obvious in view of the suggestion from the applied prior art to use silica and carbon black in the cap and base such that the tire has improved durability (low heating), improved abrasion resistance, low rolling resistance and improved late term cut and chip resistance.

3) **Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 602 in view of at least one of Japan 349 and Korea and further in view of Canada (CA 1169344) and Nakamura et al (US 6095217).**

Japan 602 is discussed above. Japan 602 does not recite using 8 to 35 parts silica in the cap.

As to claim 7, it would have been obvious to one of ordinary skill in the art to provide the tread of Japan '602's tire having improved durability (low heating), wear resistance, rolling resistance and late term cut and chip resistance such that the cap comprises silica and carbon black as claimed so that:

the cap comprises:

100 parts natural rubber,
about 25 to about 50 parts carbon black, and
about 8 to about 35 parts silica;

and

the base comprises:

100 parts natural rubber,
about 25 to about 50 parts carbon black, and
about 8 to about 35 parts silica

since:

(1) Japan 602, directed to improving durability (low heating), wear resistance and late term cut and chip resistance, teaches:

a cap comprising

Art Unit: 1733

100 parts natural rubber,
reinforcing filler such as 50 parts carbon black,
a base comprising
100 parts natural rubber,
10-40 parts of carbon black,
10-40 parts silica
and.

(2) (a) Japan 349, directed to a cap / base tire tread having low heat build up and high abrasion resistance, teaches a **rubber composition X for the cap and undertread (base)** comprising 100 part natural rubber, 0-80 parts carbon black and 5-80 parts silica; Japan 349 thereby suggesting using silica and carbon black in both the cap and base of Japan 602's tread and/or (b) Korea, concerned with abrasion resistance of a cap / base tire tread, teaches improving gas mileage by using a **cap** comprising 100 parts natural rubber, 35-40 parts carbon black and 10-15 parts silica and a **sub-tread (base)** comprising 100 parts natural rubber, 25-38 parts carbon black and 5-20 parts silica; Korea thereby suggesting using silica and carbon black in both the cap and base of Japan 602's tread.

As to claimed tread base to tread cap volume ratio being 0.5 - 1.0, Japan 602 suggests this claimed volume ratio since Japan 602 teaches providing the base with a thickness of more than 50% of the non-skid base and providing the cap with a thickness of less than 50% of the non-skid base. See translation of Japan 602.

Furthermore, it would have been obvious to one of ordinary skill in the art to provide Japan 602's cap and base such that the cap has a modulus G' of 1.2 MPa to 1.6 MPa and the base has a modulus G' of 1.0 MPa to about 1.3MPa in view of:

Art Unit: 1733

(1) Japan 602's teaching to form the cap and **base** of the tread such that the tire has improved durability (low heating), wear resistance, *rolling resistance* and late term cut and *chip resistance*;

(2) Canada's suggestion to provide an **undertread rubber (base rubber)** of a two layer tread with a dynamic modulus of 8.2 - 33.0 kg/cm² (0.8 to 3.2 MPa) to improve *rolling resistance*; and

(3) Nakamura et al's suggestion to provide the cap of a two layer tread with a storage modulus (dynamic modulus) of index 100, which is higher than the storage modulus (dynamic modulus) of index 80-95 for the base, in a tire having improved *chipping resistance*.

As to claims 8 and 9, the claimed amounts of silica and carbon black for the tread cap / tread base would have been obvious in view of the suggestion from the applied prior art to use silica and carbon black in the cap and base such that the tire has improved durability (low heating), improved abrasion resistance, low rolling resistance and improved late term cut and chip resistance.

4) **Claims 1 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 602 in view of at least one of Japan 349 and Korea and further in view of Canada and Nakamura et al as applied above and further in view of Europe 281.**

As to claim 1 and 4-5, Europe 281 is applied for the same reasons given for claims 10-12.

Art Unit: 1733

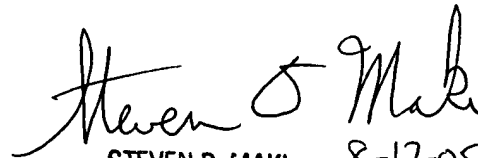
Remarks

- 5) Applicant's arguments with respect to claims 1, 4-5 and 7-12 have been considered but are moot in view of the new ground(s) of rejection.
- 6) No claim is allowed.
- 7) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
August 17, 2005


STEVEN D. MAKI
PRIMARY EXAMINER
~~GROUP 1300~~
AU 1733
8-17-05